AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

1.   (currently amended)   A method for enhancing video, comprising the steps of:

defining a virtual surface relative to a camera, said defining includes representing said virtual surface in a three-dimensional coordinate system for said camera, selecting a reference point for said virtual surface relative to said camera, and positioning said virtual surface close to a portion of an environment to be enhanced in an image from said camera;

identifying one or more positions in a first image from said camera;

converting said one or more positions to one or more locations in relation ~~to a~~ to said virtual surface;

converting said one or more locations in relation to said virtual surface to one or more positions in a second image from said camera; and

enhancing said second image based on said one or more positions in said second image.

2.   (original)   A method according to claim 1, wherein:

said virtual surface is a sphere.

3.   (original)   A method according to claim 2, wherein:

said first image and said second image are video images;

said first image depicts an environment having an actual surface;

said second image depicts said actual surface;

said one or more positions in said first image are on an image of said actual surface in said first image;

said one or more locations are three dimensional locations on said sphere;

said one or more positions in said second image are on an image of said actual surface in said second image;

said step of enhancing includes editing said second image in relation to said one or more

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positions in said second image;

> said step of converting said one or more locations is based on camera sensor data; and

> said camera sensor data pertains to an attitude of a camera capturing said second image.

4. (original) A method according to claim 1, wherein:

said step of identifying includes using a pointing device to select one or more pixels on a monitor.

5. (original) A method according to claim 1, wherein:

said step of identifying includes using a pointing device to select one or more pixels on a monitor and using said selected pixels to determine said one or more positions in a first image

6. (original) A method according to claim 1, wherein:

said step of identifying includes selecting a region of said first image.

7. (original) A method according to claim 1, wherein:

said one or more locations are three dimensional locations on said virtual surface.

8. (original) A method according to claim 1, wherein:

said one or more locations are all on said virtual surface.

9. (original) A method according to claim 1, wherein:

said second image depicts an environment;

said second image is captured by a camera; and

said step of converting said one or more locations is performed without surveying a position of said camera in relation to said environment.

10. (previously presented) A method according to claim 1, wherein:

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said second image depicts an environment having an actual surface;

said one or more positions in said second image are on an image of said actual surface in said second image; and

said step of converting said one or more locations are performed without knowing a distance between said actual surface and a camera capturing said second image.

11.   (original)   A method according to claim 1, wherein:

said step of converting said one or more locations is based on camera sensor data; and

said camera sensor data pertains to an attitude of a camera capturing said second image.

12.   (original)   A method according to claim 1, wherein:

said step of converting said one or more locations is based on camera sensor data and stabilization offset data;

said camera sensor data pertains to an attitude of a camera capturing said second image; and

said stabilization offset data is used to correct said camera sensor data.

13.   (original)   A method according to claim 12, further comprising the steps of:

identifying positions of edges;

transforming said positions of said edges to edge locations on said virtual surface;

transforming said edge locations to edge positions in said second image using said camera sensor data;

determining said stabilization offset data based on a difference between said transformed edge positions in said second image and actual edge positions in said second image.

14.   (original)   A method according to claim 1, wherein:

said step of enhancing includes adding an enhancement image to said second image and accounting for occlusions of said enhancement image.

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15.   (original)   A method according to claim 14, wherein:

said step of accounting for occlusions of said enhancement image includes accessing a color map and editing pixels of said second image according to said color map.

16.   (original)   A method according to claim 14, wherein:

said second image is an image of an environment having an actual surface; and

said enhancement image appears to be on said actual surface.

17.   (original)   A method according to claim 1, further comprising the steps of:

converting said one or more locations in relation to said virtual surface to one or more positions in a third image; and

enhancing said third image based on said one or more positions in said third image.

18.   (original)   A method according to claim 1, wherein:

said first image and said second image are video images;

said first image depicts an environment having an actual surface;

said second image depicts said actual surface;

said step of identifying includes annotating an image of said actual surface in said first image, said one or more positions represent said annotation, said annotation is at a first orientation in relation to said actual surface; and

said step of enhancing includes adding said annotation to an image of said actual surface in said second image at said first orientation in relation to said actual surface.

19.   (original)   A method according to claim 18, wherein:

said step of annotating an image includes receiving a set of points from a touch screen.

20.   (original)   A method according to claim 1, wherein:

said step of identifying one or more positions in a first image include identifying a position to

add a virtual advertisement;

said step of converting said one or more locations includes determining where to add said virtual advertisement into said second image; and

said step of enhancing includes adding said virtual advertisement into said second image.

21. (original) A method according to claim 1, wherein:

said step of identifying one or more positions in a first image include identifying a set of positions in an environment, said set of positions bound a virtual advertisement;

said step of converting said one or more positions includes transforming said set of positions in said environment to locations on said virtual surface;

said step of converting said one or more locations includes determining where said set of positions are in said second image; and

said step of enhancing includes adding said virtual advertisement into said second image where said set of positions are in said second image.

22. (currently amended) A method for enhancing video, comprising the steps of:

defining a virtual surface relative to a camera, said defining includes representing said virtual surface in a three-dimensional coordinate system for said camera, selecting a reference point for said virtual surface relative to said camera, and positioning said virtual surface close to a portion of an environment to be enhanced in an image from said camera;

determining one or more locations in relation to a to said virtual surface, said one or more locations corresponding to one or more positions in an image of an actual surface depicted in a first video image, wherein said virtual surface is different from said actual surface depicted in said first video image; and

converting said one or more locations in relation to said virtual surface to one or more positions in a second video image.

23. (previously presented) A method according to claim 22, further comprising the steps

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of:

enhancing said second video image based on said one or more positions in said second video image.

24. (previously presented) A method according to claim 23, wherein:

said step of enhancing includes adding an enhancement image to said second video image and accounting for occlusions of said enhancement image.

25. (original) A method according to claim 22, wherein:

said virtual surface is a sphere; and

said one or more locations are three dimensional locations on said sphere.

26. (previously presented) A method according to claim 22, wherein:

said second video image depicts an environment;

said second video image is captured by a first camera; and

said step of converting said one or more locations is performed without knowing a position of said first camera in relation to said environment.

27. (currently amended) One or more processor readable storage devices for storing processor readable code, said processor readable code for programming one or more processors to perform a method comprising the steps of:

defining a virtual surface relative to a camera, said defining includes representing said virtual surface in a three-dimensional coordinate system for said camera, selecting a reference point for said virtual surface relative to said camera, and positioning said virtual surface close to a portion of an environment to be enhanced in an image from said camera;

determining one or more locations in relation to-a to said virtual surface, said one or more locations corresponding to one or more positions in an image of an actual surface depicted in a first video image, wherein said virtual surface is of a different shape than said actual surface depicted in

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~~said first video image~~; and

converting said one or more locations in relation to said virtual surface to one or more positions in a second video image.

28. (previously presented) One or more processor readable storage devices according to claim 27, wherein said method further comprises the steps of:

enhancing said second video image based on said one or more positions in said second video image.

29. (previously presented) One or more processor readable storage devices according to claim 28, wherein:

said step of enhancing includes adding an enhancement image to said second video image and accounting for occlusions of said enhancement image.

30. (original) One or more processor readable storage devices according to claim 27, wherein:

said virtual surface is a sphere; and

said one or more locations are three dimensional locations on said sphere.

31. (previously presented) One or more processor readable storage devices according to claim 27, wherein:

said second video image depicts an environment;

said second video image is captured by a first camera; and

said step of converting said one or more locations is performed without knowing a position of said first camera in relation to said environment.

32. (previously presented) One or more processor readable storage devices according to claim 27, wherein said method further comprises the steps of:

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storing said one or more positions in said image of said actual surface depicted in said first video image, said step of determining includes converting said one or more positions to said one or more locations in relation to said virtual surface; and

enhancing said second video image based on said one or more positions in said second video image.

33.   (previously presented) One or more processor readable storage devices according to claim 32, wherein:

said second video image depicts said actual surface;

said step of storing includes storing an annotation of said image of said actual surface, said one or more positions represent said annotation, said annotation is at a first orientation in relation to said actual surface; and

said step of enhancing includes adding said annotation to an image of said actual surface in said second video image at said first orientation in relation to said actual surface.

34.   (previously presented) One or more processor readable storage devices according to claim 32, wherein:

said step of storing includes storing a set of positions in an environment, said set of positions bound a virtual advertisement;

said step of converting said one or more positions includes transforming said set of positions in said environment to locations on said virtual surface;

said step of converting said one or more locations includes determining where said set of positions are in said second video image; and

said step of enhancing includes adding said virtual advertisement into said second video image where said set of positions are in said second video image.

35.   (previously presented) An apparatus for enhancing video, comprising:

video modification hardware; and

one or more processing devices in communication with said video modification hardware, said one or more processing devices perform a method comprising the steps of:

defining a virtual surface at a desired position with respect to a camera;

identifying one or more positions in an image of an actual surface depicted in a first video image;

determining one or more locations in relation ~~to a~~ to said virtual surface that correspond to said one or more positions in said image of said actual surface~~, wherein said virtual surface is different from said actual surface depicted in said first video image~~; and

converting said one or more locations in relation to said virtual surface to one or more positions in a second video image.

36. (previously presented) An apparatus according to claim 35, wherein said method further comprises the steps of:

enhancing said second video image based on said one or more positions in said second video image.

37. (previously presented) An apparatus according to claim 35, wherein:

said step of enhancing includes adding an enhancement image to said second video image and accounting for occlusions of said enhancement image.

38. (original) An apparatus according to claim 35, wherein:

said virtual surface is a sphere; and

said one or more locations are three dimensional locations on said sphere.

39. (previously presented) An apparatus according to claim 35, wherein:

said second video image depicts an environment;

said second video image is captured by a first camera; and

said step of converting said one or more locations is performed without knowing a position of

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said first camera in relation to said environment.

40. (previously presented) An apparatus according to claim 35, wherein said method further comprises the steps of:

storing said one or more positions in said image of said actual surface depicted in said first video image, said step of determining includes converting said one or more positions to said one or more locations in relation to said virtual surface; and

enhancing said second video image based on said one or more positions in said second video image.

41. (previously presented) An apparatus according to claim 40, wherein:

said second video image depicts said actual surface;

said step of storing includes storing an annotation on said image of said actual surface depicted in said first video image, said one or more positions represent said annotation, said annotation is at a first orientation in relation to said actual surface; and

said step of enhancing includes adding said annotation to an image of said actual surface in said second video image at said first orientation in relation to said actual surface.

42. (previously presented) An apparatus according to claim 40, wherein:

said step of storing includes storing a set of positions in an environment, said set of positions bound a virtual advertisement;

said step of converting said one or more positions includes transforming said set of positions in said environment to locations on said virtual surface;

said step of converting said one or more locations includes determining where said set of positions are in said second video image; and

said step of enhancing includes adding said virtual advertisement into said second video image where said set of positions are in said second video image.

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43.   (previously presented) An apparatus according to claim 35, further comprising:

camera sensors;

a gatherer computer, said gatherer computer receives camera sensor data from said camera sensors;

a time code inserter, said time code inserter receives video and adds time codes to said video; and

a touch screen, said one or more processing devices include a first processor and a second processor, said first processor receives camera sensor data from said gatherer and video from said time code inserter, said first processor also receives annotation data from said touch screen, said annotation data relates to a set of positions on said touch screen, said one or more positions in said image of said actual surface being identified from said annotation data, said first processor converts said positions on said touch screen to said one or more locations in relation to said virtual surface, said first processor sends drawing information to said second processor, said drawing information is based on said one or more positions in said second video image, said second processor directs said video modification hardware to add one or more annotation image to said second video image, said annotation image corresponds to said annotation data, said step of converting said one or more locations is based on said camera sensor data.

44.   (original)   An apparatus according to claim 35, further comprising:

camera sensors, said camera sensors provide camera sensor data to said one or more processors, said step of converting said one or more locations is based on said camera sensor data.

45.   (cancelled)

46.   (cancelled)

47.   (previously presented) A method according to claim 1, wherein:

said one or more positions in said first image are two-dimensional positions;

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said one or more locations are three-dimensional locations in relation to said virtual surface; and

said one or more positions in said second image are two-dimensional positions.

48. (previously presented) A method according to claim 1, wherein at least one of said one or more locations are not located on said virtual surface.

49. (previously presented) A method according to claim 22, wherein:

said one ore more locations in relation to said virtual surface are three-dimensional locations in relation to said virtual surface; and

said one or more positions in said second image are two-dimensional positions in said second image.

50. (previously presented) A method according to claim 22, wherein:

said actual surface is a three-dimensional surface;

said virtual surface is a three-dimensional surface; and

said first video image and said second video image are two-dimensional images.

51. (currently amended)   A method for enhancing video, comprising:

defining a virtual surface in a three-dimensional coordinate system for a camera, said defining includes selecting at least one dimension of said virtual surface, relative to said camera, such that at a least a portion of said virtual surface is positioned close to a portion of an environment to be enhanced in an image from said camera, wherein a portion of said virtual surface is defined at a desired position in proximity to a portion of an environment to be enhanced in an image depicting said environment;

receiving an identification of one or more positions in a first image, wherein said first image depicts said environment;

converting said one or more positions to one or more locations in relation to said virtual

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surface;

converting said one or more locations to one or more positions in a second image, wherein said second image depicts said environment; and

enhancing said second image based on said one or more positions in said second image.

52.   (previously presented)A method according to claim 51, wherein enhancing said second image includes adding an enhancement image to said second image, wherein said enhancement image is positioned in said second image based on said one or more positions in said second image.

53.   (previously presented)A method according to claim 52, wherein said enhancement image appears to be located at said portion of said environment.

54.   (previously presented)A method according to claim 52, wherein said enhancement image is a virtual advertisement.

55.   (previously presented)A method according to claim 51, wherein said environment includes an actual surface, said virtual surface is not an approximation of said actual surface or said environment.

56.   (previously presented)A method according to claim 51, wherein said environment includes an actual surface, said virtual surface is of a different shape than said actual surface.

57.   (cancelled)

58.   (previously presented)A method according to claim 51, wherein:
said one or more positions in said first image are two-dimensional positions;
said one or more locations in relation to said virtual surface are three-dimensional locations;

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and

said one or more positions in said second image are two-dimensional positions.

59.   (new) An apparatus according to claim 51, wherein:

said virtual surface is a sphere; and

said at least one dimension of said sphere includes a radius of said sphere.

60.   (new) An apparatus according to claim 35, wherein said step of defining a virtual surface at a desired position with respect to a camera includes:

representing said virtual surface in a three-dimensional coordinate system for said camera;

selecting a reference point for said virtual surface relative to said camera; and

positioning said virtual surface close to a portion of an environment to be enhanced in an image from said camera.

61.   (new) An apparatus according to claim 35, wherein said step of defining a virtual surface at a desired position with respect to a camera includes:

selecting at least one dimension of said virtual surface, relative to said camera, such that at least a portion of said virtual surface is positioned close to a portion of an environment to be enhanced in an image from said camera.